3G BACKHAUL

Tejas provide backhaul solutions which address a variety of customer requirements and different technologies and topologies of the legacy networks. These networks can be running partly on fiber and partly on microwave, might be deploying SDH, PDH or Ethernet for transmission and might have "hub and spoke" OR "a hierarchy of rings" topology.

With Ethernet becoming the most preferred currency of exchange for data traffic, Tejas network elements can accept it on an FE or GigE interface at a BTS location. Then depending on the transmission technology deployed, this Ethernet traffic can be mapped into SDH, PDH or Ethernet aggregates. Ethernet over SDH and Ethernet over PDH use ITU standardized GFP and LCAS for interoperability. Then depending on the transmission medium, these STM1, E1s or Ethernet can be transmitted either over fiber, copper or microwave (through appropriate IDUs).

Tejas ELAN series of cards provide sophisticated features like classification of traffic into flows and applying various scheduling algorithms to those flows. The flow classification can be based on Ethernet Mac Addresses, VLAN tags and IP or TCP header fields. Once the traffic is classified into flows, scheduling algorithms like "Strict Priority", "Weighed Fair Queing" or "Round Robin" can be applied. These ensure that different SLA parameters in terms of throughput, latency, jitter can be met for different applications. For ex, gaming traffic requires very low latency and hence can be put at a high priority with strict priority.

The traffic from various client interfaces can be multiplexed into a single high bandwidth aggregate, and enables multiple services and applications to share the bandwidth. This is important in data networks, since for most of the time, a client will not be sending any data, but will send out a burst of data intermittently for short durations. Sharing backhaul bandwidth ensures a low capex for the network.

Telecom services are expected to be reliable and hence transport networks have traditionally implemented protection switching within 50ms through provisioning of a redundant path. Tejas brings the same 50ms protection capabilities to Ethernet by implementing ERPS (Ethernet Ring Protection Switching). Not only does it provide 50ms switching time in a packet ring, but also allows both the work and protect sides to be used in a load distributed manner, thus giving a 100% increase in network capacity.

With an assortment of applications and services running on the network, it is also important to individually monitor each of them for two reasons. Once is for fast troubleshooting and fault localization. Second is for ensuring that one 'misbehaving' service doesn't affect other services on the network. Tejas brings in features like end-to-end OAM and performance monitoring to address these concerns.

One of the biggest concerns for network operators these days due to exponential subscriber growth and bandwidth usage is capacity or fiber exhaust. Tejas addresses this through it FPTA (Future Proof Transport Architecture). An existing 2.5G operator can start 3G services by deploying ELAN blades on the existing SDH equipment and carve out bandwidth out of the existing SDH network for these new services. Later as bandwidth grows, some of the GigE interfaces on the ELAN cards can be configured as aggregate ports and this additional traffic need not go through an SDH network. These GigE links can be commissioned over another pair of fiber cores in the same cable, or carried on the same cores using CWDM blades on Tejas equipment. Later on as the operator moves from 3G to 4G with all the voice traffic also moving to packet, the network can be migrated to 100% packet with a few legacy TDM circuits carried through circuit emulation.

To summarize, Tejas solutions offer scalable, reliable and future ready solutions to survice providers, which result in better services for the customers and lower capex and opex for service providers.

TEJAS SOLUTIONS